

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims in this application.

1. (Currently Amended) An apparatus for imaging the mouth of a user while detecting the speech of the user comprising:

a headset adapted so as to be worn on the head of the user;

a video camera mounted on the headset and positioned so as to capture a frontal view of the mouth of a user;

a microphone mounted on the headset and positioned so as to detect the speech of the user;

an illumination source mounted on the headset for illuminating the mouth of the user;

a communication device transmitting the output of the video camera and the output of the microphone to a computer;

a speaker for transmitting sound to the user, the speaker positioned in proximity to the ear of the user;

a communication path from the computer to the speaker;

wherein the communication device for communicating the output of the microphone to the computer and communication path from the computer to the speaker are used in combination to perform conventional telephony wherein the computer communicates with telephony interfaces;

wherein the illumination source is periodically energized by a pulse generator having a pulsed output, wherein a period of the pulsed output and a pulse width of the pulsed output are independently controlled to provide current to the illumination source.

2. (Original) The apparatus of claim 1 wherein the video camera is a black and white CMOS type camera.

3. (Original) The apparatus of claim 1 wherein the video camera is a color CMOS type camera.

4. (Original) The apparatus of claim 1 wherein the video camera is a black and white CCD type camera.
5. (Original) The apparatus of claim 1 wherein the video camera is a color CCD type camera.
6. (Original) The apparatus of claim 1 wherein the video camera is positioned so as to capture a frontal view of the mouth of the user and is positioned substantially on the center line of the mouth.
7. (Original) The apparatus of claim 1 wherein the video camera positioned so as to capture a frontal view of the mouth of the user and is positioned to the side of the center line of the mouth.
8. (Original) The apparatus of claim 1 further comprising an optical filter limiting light entering the video camera to a band of infrared wavelengths.
9. (Original) The apparatus of claim 1 wherein the microphone is of the noise reduction type.
10. (Original) The apparatus of claim 1 wherein the illumination source includes a plurality of broadband light emitters.
11. (Original) The apparatus of claim 10 further comprising an optical filter limiting light emitted from said broadband light emitters to a band of infrared wavelengths.
12. (Original) The apparatus of claim 1 wherein the illumination source includes a plurality of narrowband light emitters.

13. (Original) The apparatus of claim 12 further comprising an optical filter limiting light emitted from said narrowband light emitters to a band of infrared wavelengths.

14. (Original) The apparatus of claim 1 wherein the illumination source is continuously energized.

15. (Canceled)

16. (Original) The apparatus of claim 15 wherein the illumination source is de-energized during retrace or blanking periods of the video camera.

17. (Canceled)

18. (Original) The apparatus of claim 1 wherein the headset includes a boom supporting the video camera and illumination source so as to capture the frontal view of the mouth.

19. (Original) The apparatus of claim 18 wherein the boom supports the microphone to position the microphone in the vicinity of the mouth.

20. (Original) The apparatus of claim 1 further comprising an amplifier coupled to the microphone.

21. (Original) The apparatus of claim 1 wherein the communication device includes a radio frequency transmitter receiving the video output of the video camera and the audio output of the microphone and a corresponding receiver adapted to provide the video and audio to the computer.

22. (Original) The apparatus of claim 1 wherein the communication device is cabling.

23. - 25. (Canceled)

26. (Previously Presented) The apparatus of claim 1 wherein the computer is adapted to perform telephony functions over the internet.

27. (Currently Amended) The apparatus of claim 1 further comprising:

~~a speaker for transmitting sound to the user, the speaker positioned in proximity to the ear of the user;~~

a wireless telephony transceiver connected to the speaker and the microphone to provide wireless telephony functions.

28. (Original) The apparatus of claim 1 wherein the illumination source is adjustable to shape a light output distribution to reduce exposure of eyes of the user to the light output.

29. (Original) The apparatus of claim 1 further comprising a fiber optic cable providing an optical image of the frontal view of the mouth to the video camera.

30. (Original) The apparatus of claim 1 wherein the illumination source includes a fiber optic cable to illuminate the mouth of the user.

31. (Original) The apparatus of claim 1 further comprising a tube acoustically coupled to the microphone so as to provide speech of the user to the microphone.